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# SEQUENCE LISTING

<110> DANA-FARBER CANCER INSTITUTE, INC.  
KOLODNER, Richard  
WINAND, Nena

<120> A METHOD OF DETECTION OF ALTERATIONS IN MSH5

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<140> 09/470,276

<141> 1999-12-22

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<151> 1997-07-03

<150> PCT/US98/13850

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 gtcaggaagt gctgcccgtc gctcccacca tcctctgaga gtccttccag tgtcct  
 2576

<210> 54  
 <211> 833  
 <212> PRT  
 <213> Human

<400> 54

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Arg | Ala | Thr | Pro | Gly | Arg | Thr | Pro | Pro | Gly | Pro | Gly | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Gly | Ile | Pro | Ser | Ala | Ser | Phe | Pro | Ser | Pro | Gln | Pro | Pro | Met |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Pro | Gly | Gly | Ile | Glu | Glu | Glu | Asp | Glu | Glu | Glu | Pro | Ala | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

35 40 45  
 Ile His Leu Cys Val Leu Trp Ser Ser Gly Tyr Leu Gly Ile Ala Tyr  
 50 55 60  
 Tyr Asp Thr Ser Asp Ser Thr Ile His Phe Met Pro Asp Ala Pro Asp  
 65 70 75 80  
 His Glu Ser Leu Lys Leu Leu Gln Arg Val Leu Asp Glu Ile Asn Pro  
 85 90 95  
 Gln Ser Val Val Thr Ser Ala Lys Gln Asp Glu Ala Met Thr Arg Phe  
 100 105 110  
 Leu Gly Lys Leu Ala Ser Glu Glu His Arg Glu Pro Lys Gly Pro Glu  
 115 120 125  
 Ile Ile Leu Leu Pro Ser Val Asp Phe Gly Pro Glu Ile Ser Lys Gln  
 130 135 140  
 Arg Leu Leu Ser Gly Asn Tyr Ser Phe Ile Ser Asp Ser Met Thr Ala  
 145 150 155 160  
 Thr Glu Lys Ile Leu Phe Leu Ser Ser Ile Ile Pro Phe Asp Cys Val  
 165 170 175  
 Leu Thr Val Arg Ala Leu Gly Gly Leu Leu Lys Phe Leu Ser Arg Arg  
 180 185 190  
 Arg Ile Gly Val Glu Leu Glu Asp Tyr Asp Val Gly Val Pro Ile Leu  
 195 200 205  
 Gly Phe Lys Lys Phe Val Leu Thr His Leu Val Ser Ile Asp Gln Asp  
 210 215 220  
 Thr Tyr Ser Val Leu Gln Ile Phe Lys Ser Glu Ser His Pro Ser Val  
 225 230 235 240  
 Tyr Lys Val Ala Ser Gly Leu Lys Glu Gly Leu Ser Leu Phe Gly Ile  
 245 250 255  
 Leu Asn Arg Cys Arg Cys Lys Trp Gly Gln Lys Leu Leu Arg Leu Trp  
 260 265 270

Phe Thr Arg Pro Thr Arg Glu Leu Arg Glu Leu Asn Ser Arg Leu Asp  
275 280 285

Val Ile Gln Phe Phe Leu Met Pro Gln Asn Leu Asp Met Ala Gln Met  
290 295 300

Leu His Arg Leu Leu Ser His Ile Lys Asn Val Pro Leu Ile Leu Lys  
305 310 315 320

Arg Met Lys Leu Ser His Thr Lys Val Ser Asp Trp Gln Val Leu Tyr  
325 330 335

Lys Thr Val Tyr Ser Ala Leu Gly Leu Arg Asp Ala Cys Arg Ser Leu  
340 345 350

Pro Gln Ser Ile Gln Leu Phe Gln Asp Ile Ala Gln Glu Phe Ser Asp  
355 360 365

Asp Leu His His Ile Ala Ser Leu Ile Gly Lys Val Val Asp Phe Glu  
370 375 380

Glu Ser Leu Ala Glu Asn Arg Phe Thr Val Leu Pro Asn Ile Asp Pro  
385 390 395 400

Asp Ile Asp Ala Lys Lys Arg Arg Leu Ile Gly Leu Pro Ser Phe Leu  
405 410 415

Thr Glu Val Ala Gln Lys Glu Leu Glu Asn Leu Asp Ser Arg Ile Pro  
420 425 430

Ser Cys Ser Val Ile Tyr Ile Pro Leu Ile Gly Phe Leu Leu Ser Ile  
435 440 445

Pro Arg Leu Pro Phe Met Val Glu Ala Ser Asp Phe Glu Ile Glu Gly  
450 455 460

Leu Asp Phe Met Phe Leu Ser Glu Asp Lys Leu His Tyr Arg Ser Ala  
465 470 475 480

Arg Thr Lys Glu Leu Asp Thr Leu Leu Gly Asp Leu His Cys Glu Ile  
485 490 495

Arg Asp Gln Glu Thr Leu Leu Met Tyr Gln Leu Gln Cys Gln Val Leu  
 500 505 510

Ala Arg Ala Ser Val Leu Thr Arg Val Leu Asp Leu Ala Ser Arg Leu  
 515 520 525

Asp Val Leu Leu Ala Leu Ala Ser Ala Ala Arg Asp Tyr Gly Tyr Ser  
 530 535 540

Arg Pro His Tyr Ser Pro Cys Ile His Gly Val Arg Ile Arg Asn Gly  
 545 550 555 560

Arg His Pro Leu Met Glu Leu Cys Ala Arg Thr Phe Val Pro Asn Ser  
 565 570 575

Thr Asp Cys Gly Gly Asp Gln Gly Arg Val Lys Val Ile Thr Gly Pro  
 580 585 590

Asn Ser Ser Gly Lys Ser Ile Tyr Leu Lys Gln Val Gly Leu Ile Thr  
 595 600 605

Phe Met Ala Leu Val Gly Ser Phe Val Pro Ala Glu Glu Ala Glu Ile  
 610 615 620

Gly Val Ile Asp Ala Ile Phe Thr Arg Ile His Ser Cys Glu Ser Ile  
 625 630 635 640

Ser Leu Gly Leu Ser Thr Phe Met Ile Asp Leu Asn Gln Val Ala Lys  
 645 650 655

Ala Val Asn Asn Ala Thr Glu His Ser Leu Val Leu Ile Asp Glu Phe  
 660 665 670

Gly Lys Gly Thr Asn Ser Val Asp Gly Leu Ala Leu Leu Ala Ala Val  
 675 680 685

Leu Arg His Trp Leu Ala Leu Gly Pro Ser Cys Pro His Val Phe Val  
 690 695 700

Ala Thr Asn Phe Leu Ser Leu Val Gln Leu Gln Leu Leu Pro Gln Gly  
 705 710 715 720

Pro Leu Val Gln Tyr Leu Thr Met Glu Thr Cys Glu Asp Gly Glu Asp



Leu Asp Ile Phe Ile Ser Gln Glu Val Leu Pro Ala Ala Pro Thr Ile  
820 825 830

Leu

|       |     |
|-------|-----|
| <210> | 56  |
| <211> | 74  |
| <212> | DNA |

<213> Human

<220>

<221> intron

<222> (73)..(74)

<223> N = A or T or G or C

<400> 56

gtctctgagg ggagtagaaa cttgaatgga gagttgatgg gaatttaaaa taaaagaggg

60

ttgggagccg ggnn

74

<210> 57

<211> 189

<212> DNA

<213> Human

<400> 57

aaaaaaaaac agggttggga agagctgggc aagtctctta cctcctgagt ggctgtttca

60

cattcactaa atgggggtga tgatgcctat ctcagagatt tgagaaaatg attaaattat

120

ataagacatg gtaaacccta cacttatgag tgattctaata agtgatttcc tttcttcctt

180

gctggacag

189

<210> 58

<211> 450

<212> DNA

<213> Human

<220>

<221> intron

<222> (449)..(450)

<223> N = A or T or G or C

<400> 58

gtggggatgg aaccatgaat tcctctgctc tctgggattg cagatgtgtt acacacacac

60

acacacacac acacacacac acacacatat tttttttttc tagacagagt cttgctctgt  
120  
taccagaggt caagtgcagt ggcgcaatct tggctcactg cagcctccac ctctggggt  
180  
caagcaattc tcctgactca acctcccgag tagctgggac tacaggcgtg tgccaccaca  
240  
cccagctagt tttttgtgtg tgttttttagc acagacgggtg tttcaccatg ttggccaggg  
300  
tggtctcaaa ctctgacct tgtgatccgc ccaccttggc ctctaaagt gctgggacta  
360  
caggtgtgag tcaccacgcc cagccatggt ttacttacat taactcacct cactgtctag  
420  
catattttgt gttgctgtaa ggaaatacnn  
450

<210> 59  
<211> 323  
<212> DNA  
<213> Human

<400> 59  
ggcgacaaat atatatgacg tatttacaat gtttcaggtg cttcagattc agccctgggc  
60  
aaatcagtca tgtctgttct ccagggggtt acagcctagt gacaacatcc agaacatccc  
120  
acttccctct caccatccca ccactcttaa ctacttttct aaatctcaac ttctacctgt  
180  
gttcccactg tgcagagcac tccctactcc tagggaggaa atgtttttga gaaggagagg  
240  
ggtaggaaga ggagggctat gggttttctc ttagtcaaag acaaagatcc tttaactcat  
300  
ttgatctctg ttctccttcc aag  
323

<210> 60  
<211> 150  
<212> DNA  
<213> Human

<400> 60  
gtaaggactt ggtaaaggat agagggaaaa tggggaagga ctaatatatg gaatattcca

60

gggggctaga attgggtgag agggagtgtc agacagaggt agaaggactg agatgtaaag

120

aatgatagcc ttttctttcc tccccacag

150

&lt;210&gt; 61

&lt;211&gt; 733

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 61

gtatctcctt ccttttgctt tgcctaactc cctgttcggg tgtcccatc tttccccaa

60

ctctaccttc atcatcacag atctcccctc tgccttatgt catcctaaac ctttgtgtc

120

ctcatgccct atgacctgtc cccccaagat ctctcctgct ccctaccctt taataatctg

180

cagcttattg ggaagcctct gcttaagtca tgtctaggga tgagggcctc ccctgaggag

240

tggtgacact ttttggacag ggttttattg ttggaattct ccccatatag ttaaagcctt

300

ttatcaccaa accaaaaggc actgcctcag tgacccttat tatgatccat aaggcacttc

360

tataactttc ctaggtttac aataagaaca ggagtgtact atcctaatta gatattaagg

420

cattagtgtt actagttcta ttaataccat tattttgacc aaaatcctca attccagaca

480

gatgtctact ttcctcagcc atttatcttt ctcaggctgt gctttcagac aagtatcttt

540

atattatatg tagaataaaa agagaattag actaagagtc tgaaaatttg gttcttgctc

600

tagctttcca ttaactgcct gtgtgagctt gggcaagtca aataatctct cttgcttcta

660

ttgtctcatt cttaaaatgg ggtgaaaaaa ttgagctaca agaccgttcc ctttgcttgc

720

ctccctcaaa tag

733

&lt;210&gt; 62

&lt;211&gt; 164

<212> DNA  
<213> Human

<400> 62  
gtgagattgg tcttggggga taagggctgg gaggcggcac aagtgctagg gctgaattct  
60  
gggaggtact ggcctagccc tggaaaatag taactttccc tgggtgctctg cagccccccag  
120  
gagattttaag atttaccctcg attccactgc tgateccctc ccag  
164

<210> 63  
<211> 246  
<212> DNA  
<213> Human

<400> 63  
gtaggtgatt caccccaacc ccaaccaaag taatgtggga ttgggaggcc tgaaaagtaa  
60  
agtgggggtg ggggtgtgat gtggctgtga cccagtgggt caagggctct aggacacccg  
120  
ggagaatcta agggctaata agactttggg aagaagactg ggacaatatt cagagagggg  
180  
gacaaaggaa gtggagttgt ggaacgaact cagactgctt cctgcttttt tgttttctgt  
240  
cctcag  
246

<210> 64  
<211> 413  
<212> DNA  
<213> Human

<220>  
<221> intron  
<222> (412)..(413)  
<223> N = A or T or G or C

<400> 64  
gtaaagaggt ggaggcacgc tgctgtctct ggggagggag aaggattaag tttaatgccc  
60

caataatcct aatgaggctc tagtttcct aatcctgggg ctattaagat ctctctcctt  
120  
gaaggaaagg gaaggggggt tttgaggga agagaggaag aaaagcataa agatactagc  
180  
tttcttttct ataggagaa actgaggcaa agaaaagtaa gggacaaacc ttacatcaag  
240  
atatgatctc ggctgggcgc ggtggctcat gcctgtaatc cccgcgcttt gggaggccaa  
300  
ggcgggtgga tcgcctgagg tcaggagttt gagacctgac caatatggta aaaccccgtc  
360  
tctactaaaa atataaaaat tagctgggtg tgttggtgcgc ctgtaatccc ann  
413

<210> 65  
<211> 136  
<212> DNA  
<213> Human

<400> 65  
ttttttttta aaaaaaaaaa aaaaaagacg tgatctcagg aggatatccc ctgtcccat  
60  
tccatttatc agtcctcaat tcttattccc ctcaaaagtc caagttaccc caaactcctc  
120  
catttctcct cgacag  
136

<210> 66  
<211> 356  
<212> DNA  
<213> Human

<220>  
<221> intron  
<222> (355)..(356)  
<223> N = A or T or G or C

<400> 66  
gtagggtgtgc cccatccctc atctcacgta caaagaccta ccagaaaagc aattggctcc  
60  
aaagatgtgt ccagacctcc cttcccactt cactcccatt gtcagatata tctttcatgc  
120

caatccaaat ttcttaccta tttgtacccc ccgcccccca agcttgagca tcttcccata  
 180  
 ctttgtggct gtacagtgtg ttgcatatca gccattactt taccaattct gtgttccttc  
 240  
 cctggggtttg tatgaatggt tctactagtt gggtagctgt tagggacttt gggagacctt  
 300  
 gtgtatagag aagagttttg taactgcata actgcctatt tgatttgtat agagnn  
 356

<210> 67  
 <211> 426  
 <212> DNA  
 <213> Human

a  
 <400> 67  
 ccaggagtag agggagagac agaaacagcc aacaatggcc cagaaaatgg atgatataatt  
 60  
 agataaggga agaaatgagt taccagattg gggagagatg gtttggatgt caaagcaggt  
 120  
 gatcgggtgac gtcagcgtcc gagggaagac ggctgccacc ggcggggcca gttgagggaa  
 180  
 ctaggtagtt aagtgttgtc gggctaaaag tccctagagt gtccatccct ccccatctc  
 240  
 catgtgcggt aatcccagct catttagggg ccaggcacca actttggttg cctttgtgcc  
 300  
 ctcccaggcc agcttcctca acaaccagca cctctgactg gatgcctcag gttagacaca  
 360  
 taaacacatt ccattgccct gtccgtgcct tgtaacaagt tcaatccctg ccttatccct  
 420  
 cacaag  
 426

<210> 68  
 <211> 360  
 <212> DNA  
 <213> Human

<220>  
 <221> intron  
 <222> (359)..(360)  
 <223> N = A or T or G or C

&lt;400&gt; 68

gtgagtgggt cccacacata ctacacacta atgcatgaat tccatatgca cactacatac  
60  
taagcctact aatggcagta tacagattct cacatacacc accccaccta gtagtagtaa  
120  
agcaactgcc ctttactgag cactggctaa ctgcatttca tccttataac agctttgtgt  
180  
agtagctgat atgcatctca ttttttgttg tcagcgcagg tacacatata cattgatgat  
240  
acacagactt gcacacatac agcagcagga aaaaacacaa aatgtaaggc cgggcacagt  
300  
ggctcacacc tggtatcagc actttggggg gccaacgctg ggtgaccttc catctttggn  
360

&lt;210&gt; 69

&lt;211&gt; 447

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 69

cacaggaaga atatgaaaag atgaatgtct gttgctgtta cccagagaca ctttcacagc  
60  
taaaaagaca tacaaactca tactgactca ccgctctctta ctcagcctca gagtgagctg  
120  
cagtgttggc acacaaatac ctcaacacac tgctctcctt ctaaaatatt gacaagctcc  
180  
gttacttata tacatggaat gacacacggc cttatccgtt gaaactgtga tatgtagaca  
240  
caattatgct cacatctagc aattttcagt agatacatgt aaacacacct gaatgggtag  
300  
gacactgcac ttgccactac attcccatag cacatcgtgg atacatattg ccacaatccc  
360  
cagggactgc aagcacactt tttggcaaac tgagatcaag atgatagatg taactttag  
420  
tacccccacc caaacctca cttccag  
447

&lt;210&gt; 70

&lt;211&gt; 127

&lt;212&gt; DNA



<213> Human

<400> 70

gtgagcccag ggtggagggc agggaggtgg ggaaggaggt tgagggctga tactgggcag  
60  
tgggcttctt gaggggcatt agagtgaggg aagagaaaac agcggctgta accttgtctg  
120  
actgtag  
127

<210> 71

<211> 30

<212> DNA

<213> Human

<220>

<221> intron

<222> (29)..(30)

<223> N = A or T or G or C

<400> 71

gtaaggcctt ccttcttgaa tcccaaaann  
30

<210> 72

<211> 222

<212> DNA

<213> Human

<400> 72

tacaggcatg agccactgtg cctggccagg accatatctt aattgtcttt gtagtttcag  
60  
tgtttggtac agtgcctctc actgtttctt tttgcctttg agatcttccc tctttgttac  
120  
tgtgatcttc cctactgggc tttgttcttc tgagtctgtc cctatcacca cctcaaccgg  
180  
agctggatgt ggcctgtcct cctttttgtg tttctctcac ag  
222

<210> 73

<211> 254  
 <212> DNA  
 <213> Human

<400> 73  
 gtgagtagaa ggaaaaaggg agtgcaccca gggaggtcag ggagagagaa tgcagtgtgc  
 60  
 aagatgggga aacatggaag atattgaggt caattggata aagaatggga tgggtgggagg  
 120  
 aggcagcaga acttcaggga agtatctgga gggtgagagt taaaggagga ctgcagggag  
 180  
 aattggggcc caaggagagc tgaggaacag gacagagggt gccaggctcct aagaaacagt  
 240  
 acttatctcc tcag  
 254

<210> 74  
 <211> 145  
 <212> DNA  
 <213> Human

<400> 74  
 gtgagtgttg ggtgtggatg ggctgtgag ccctgcgcag tgatggagta ccacaccttg  
 60  
 cagggtgtca ccacagctgg ggcctttcat agcaaccagg gcaggagact cacttttgat  
 120  
 aaccacctgt cttccaccct cgtag  
 145

<210> 75  
 <211> 98  
 <212> DNA  
 <213> Human

<220>  
 <221> intron  
 <222> (97)..(98)  
 <223> N = A or T or G or C

<400> 75  
 gtgagggcag gagagtgggt gtagccttca gatgtctttt gggggagata ttaggcttat

60  
gaaagacata ctggttagata agaaaacttg tggggcnn  
98

<210> 76  
<211> 83  
<212> DNA  
<213> Human

<400> 76  
atcttttaag ctcccttggg atggggaggt tccagtaagt ctccaaacaa gagagtagag  
60  
tatctcctct ttactctccc cag  
83

<210> 77  
<211> 247  
<212> DNA  
<213> Human

<400> 77  
gtaagaccct caacctctgt aagggtgagt atgaggaaaa tgagtcagca gctgaggaag  
60  
agcgttactc tacagcagca ctgccaata tgggatctct cctctgtagt ttactctga  
120  
gctttaccag cactgagaca aaggaaagag aagtcagagt taggggctgg aggtgggggt  
180  
agaaagatgg ggaaggagag gaggaccaag agatgcaaag tccacagctt tgaaccctg  
240  
taccag  
247

<210> 78  
<211> 273  
<212> DNA  
<213> Human

<400> 78  
gtgaggaaaa gccagaggtt atatgcattg taagatgttt aaaaaaagca gcagccaggg  
60

gaaggagggg agtgggcaac ttgggggatgc ttccaacagg ccctcctct tctgctctc  
120  
tgtctcgctc actctgactc tatcttttcc tctgaatgct ttgaggtctc agattgtatc  
180  
tgcaacctgt ttccagatcc ccctaggggc ctctgectct ccttcacttt ccctggaac  
240  
tgacctccag ctcccttctt caccactcc cag  
273

<210> 79  
<211> 114  
<212> DNA  
<213> Human

<400> 79  
gtaagaatag aggcgggtgg aggaatacac atgaggggcc caaaggctac atcttctggg  
60  
ggttcatcta tcttgatcca caagccatgc gaggtgcctc tccgccact gcag  
114

<210> 80  
<211> 473  
<212> DNA  
<213> Human

<400> 80  
gtgaggagaa gccctgcagc ctgggcctct ggcgtctcct gcactactc caccctact  
60  
tgccagccaa ctcaggetcc tgcagctctt ctcccatttt ctgacccgc tcttcatgaa  
120  
aggaccatca ccacatccc tgtgcttcca cctcacatgt tcttattctc cactggagag  
180  
ccatgctcta atggaacttt ccgtggccca aattccttca cctgectctg agtaggtaca  
240  
caccactccc aagtatgtct ctgcccacgt ccctgcctc ttcactgatt ctaaattagc  
300  
ccacagggct atggtcagga ttcggggagg agagacagag tcagtgtgtc tgttacctat  
360  
ttctcctgtt tcaccctgtc catttctctt tgatgtgcca ttcatgcctt gagcctcact  
420  
ttcacctcag ccacggcac caggccccag gccctgtctc cttccctatt cag

473

<210> 81  
<211> 348  
<212> DNA  
<213> Human

<400> 81  
gtcaaaggga acaaaggag gtgggattga ggaaggggat aatgggaaag gaaccctga  
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aatgctcat aacaggaaag catgccctct gctgcatgcc cttatacta aaagtgggga  
120  
gcactaaggt cagagataag aagaatcaat accataaaca tttcttgaac cttgtttca  
180  
tgtgagtcac tgttggcaaa gaggatgaac aaagcgtgca cctcaccatt caagaacttg  
240  
cagtgcagta gggagggcat gtatacagct ttattcacag gccaaactgtg gtcagtgcgt  
300  
tacgggcttc caatactaac ttccccttgt ccaccttata cccagcag  
348

<210> 82  
<211> 209  
<212> DNA  
<213> Human

<400> 82  
gtgaggggag aaactgatga ggggagaaac taaggagggg aaaatggagg aggatgaagg  
60  
agcatgacag tgaggctggg cctctggaat ggaatagggc tgtgtgggca gaaaagaaat  
120  
agaacacgag acagggaaag gcagtgcaag tgcagagggg catatggggg ccccatggct  
180  
ccgaatgcta acctctgccc tctttgcag  
209

<210> 83  
<211> 202  
<212> DNA  
<213> Human

&lt;400&gt; 83

gtgaggagac caatctagct cctcggggac ccccaggctg ggcatttccc agaggtgggg  
60  
attggctcct ctatcagaac aagggtccc tcagcacaga gaccacatcc cttccctttt  
120  
ctccctcccc acaggattgg ccaagggttt caggacagga aggaggtgat tgatgatata  
180  
ctgtctttta ttctctttta ag  
202

&lt;210&gt; 84

&lt;211&gt; 155

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 84

gtgatgagat ccaaattgtgc aaccacctcc acatcagagc tccctttcat tcctagtcct  
60  
actgggcttg ggtctaggtc cacaggattt ctgacctta tttcccttc tttcccccac  
120  
tccccttact cctcccacct tcttgcttgt cctag  
155

&lt;210&gt; 85

&lt;211&gt; 215

&lt;212&gt; DNA

&lt;213&gt; Human

&lt;400&gt; 85

gtgcgtatat ggccccagtg tctttacct ctctgcatct tctcctgcaa ctcttctccc  
60  
ccctccagca ctttgccctt cagaaaccca ccatttcttt ctgaaatccc taaatcttca  
120  
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